

AR25

# **General Annual Dynamics Report 1966**

**Results in Brief**

|                                   | 1966            | 1965            |
|-----------------------------------|-----------------|-----------------|
| Net Sales                         | \$1,796,990,612 | \$1,472,785,201 |
| Profit Before Income Taxes        | 95,606,573      | 85,738,929      |
| Income Taxes                      | 37,200,000      | 36,470,000      |
| Net Income                        | 58,406,573      | 49,268,929      |
| Per Common Share                  | 5.59            | 4.48            |
| Working Capital                   | 157,541,900     | 183,612,660     |
| Property, Plant and Equipment—Net | 237,754,430     | 210,160,031     |
| Long-Term Debt                    | 131,249,495     | 110,033,638     |
| Share Owners' Equity              | 286,101,712     | 282,827,383     |
| Per Common Share                  | 27.71           | 23.35           |
| Backlog of Orders                 | 1,651,000,000   | 1,295,000,000   |
| Common Shares Outstanding         | 10,324,596      | 10,152,968      |

**General Dynamics Report for the Year Ended December 31, 1966**



A new Navy ship takes shape at the Quincy shipyard.





## **To the Share Owners:**

General Dynamics continued its progress in 1966. Net earnings rose for the fifth consecutive year. Sales and backlog increased substantially. Investments for new facilities and for research were the highest for any year in our history.

**SALES.** Consolidated net sales of General Dynamics Corporation and subsidiaries for the year ended December 31, 1966, were \$1,796,991,000, an increase of 22 per cent over consolidated net sales of the preceding year.

Deliveries to Government services and agencies represented 78 per cent of total sales in 1966.

This Government work falls into four primary categories, representing the following proportions of total sales: Aircraft, 37 per cent; Marine (including both surface ships and submarines), 20 per cent; Tactical (including missiles, electronic and support equipment), 10 per cent; and Space vehicles and support activities, 11 per cent.

Sales to industrial and commercial customers—for electronic and communication equipment, aircraft, coal and lime, nuclear reactors and research, compressed gases, building materials and machinery—accounted for the remaining 22 per cent.

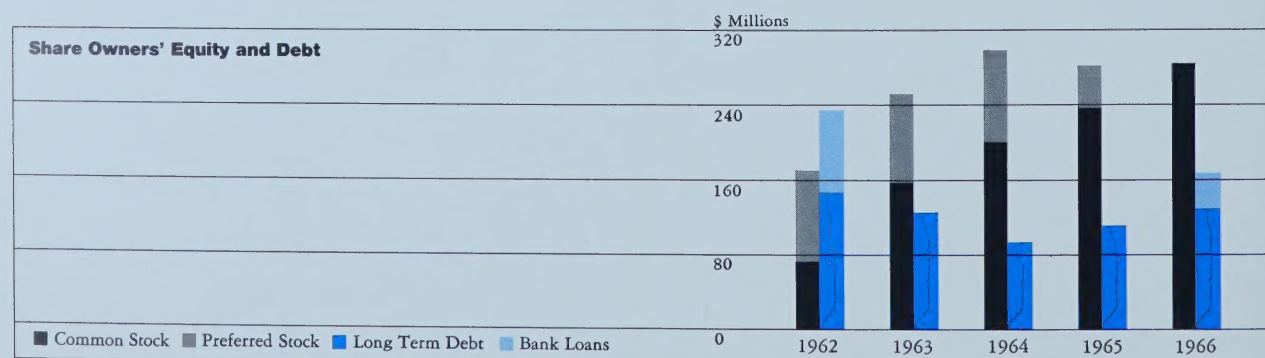
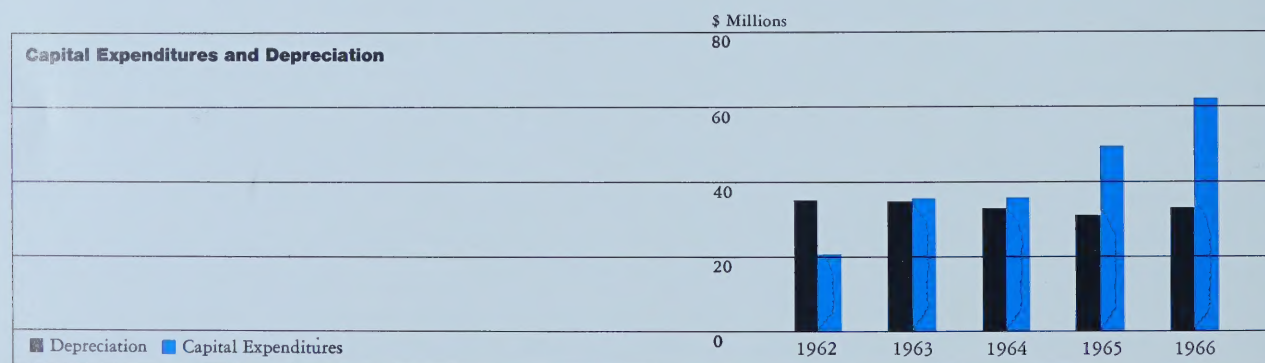
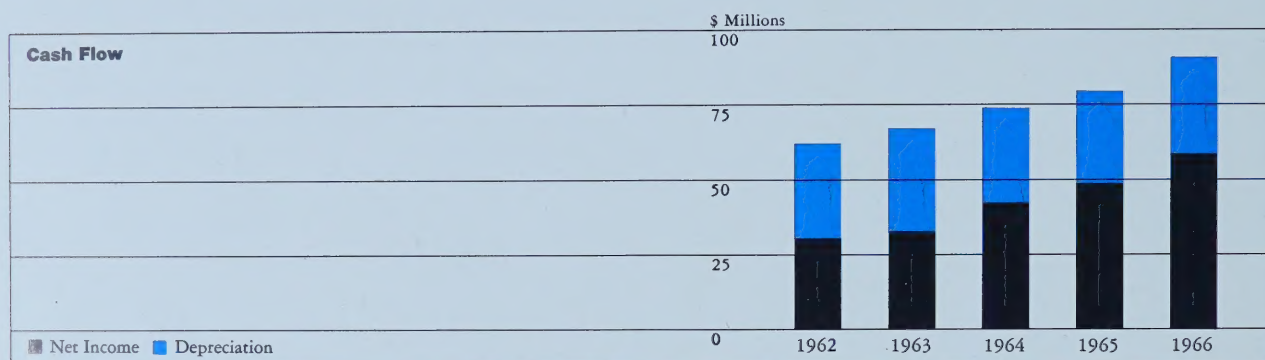
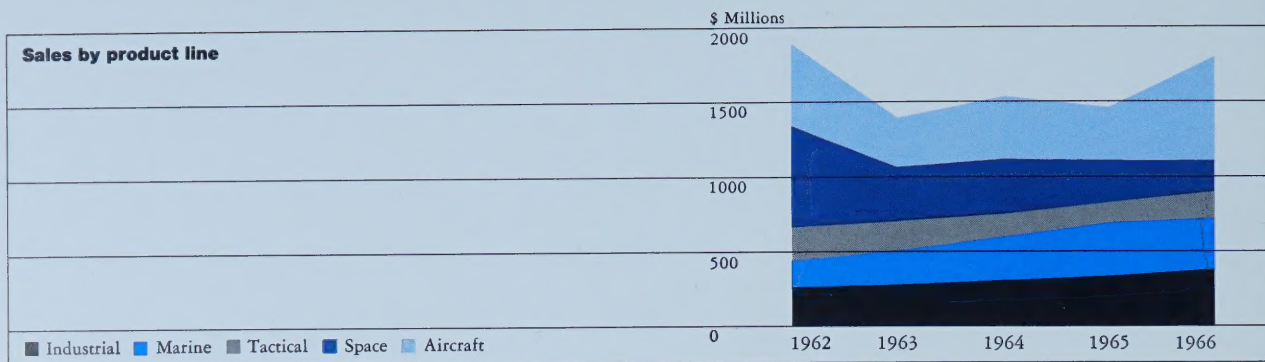
Backlog of funded orders at the end of 1966 was \$1,651,000,000. An additional \$1,741,000,000 in orders were under negotiation.

**EARNINGS.** Consolidated net income for the year ended December 31, 1966, was \$58,406,573, equivalent to \$5.59 per common share after provision for preference dividends for the first third of the year.

Net income includes nonrecurring long-term capital gains from the disposition of securities amounting to \$4,452,000 after taxes. Excluding that nonrecurring gain, net earnings increased 9.5 per cent over the previous year.

Profit from operations did not keep pace with the increase in sales due to excess costs in certain electronic, marine and nuclear contracts. In other areas of our operations, profit margins equalled or exceeded levels of the previous year.

**INVESTMENT AND ACQUISITIONS.** Expenditures for property, plant and equipment during 1966 were approximately \$62,100,000, an increase of 28 per cent over the prior year, and





we expect another significant increase during 1967. These funds are being used to improve and expand facilities for both current and future production in aircraft, marine, electronic, tactical missile and commercial fields.

During the year, the remaining convertible preference stock outstanding from the 1959 merger with Material Service Corporation was redeemed for \$49,035,000, including accrued dividends.

Long-term debt was increased somewhat to help pay for this redemption, but the result is a reduction in the net cost of capital.

We increased our ownership in United Electric Coal Companies to 100% in November, following a successful tender offer and the transfer of its operations to a wholly owned subsidiary. United Electric operates strip mines and sells its coal output primarily to electric utilities in the Midwest.

Early in the year, we acquired the operations of Dynatronics, Inc., of Orlando, Florida, a producer of telemetry equipment, whose products and know-how in space communication complement those of our Electronics and Convair divisions. Dynatronics, whose activities have been consolidated with our Electronics division, has sharply increased its sales since the acquisition.

**RESEARCH.** We have been steadily increasing our research activities, both those undertaken under contract and those funded directly by the company. These activities are exclusive of such categories as "research, development, test and evaluation," under which, for instance, come the fabrication and testing of 23 "development" F-111 aircraft.

Company-funded research and development covers many areas. The bulk of our research funds went into these categories: aerodynamics, hydrodynamics, astrodynamics, energy conversion, information sciences, structures and materials, and life sciences.

**DIVESTITURE.** Toward the end of the year, a United States District Court ordered us to divest our Liquid Carbonic operation for reciprocity in violation of the Clayton and Sherman Acts.

The compressed gas industry generally has been growing rapidly. Liquid Carbonic operations, which have been increasingly profitable over the past few years, accounted for approximately 8 per cent of the net income of General Dynamics in 1966.

We have until July, 1969, to effect the divestiture of this multi-plant, multi-national complex under a variety of permissible methods.

A number of organizations have expressed interest in its possible acquisition. We expect to realize a fair price and to use the proceeds profitably in other aspects of our operations.

**KEY PROGRAMS.** Delivery of development F-111 aircraft to the military services for test and evaluation (exclusive of one being developed into a strategic bomber version and one into a reconnaissance version) was completed.

Although the RDT&E program continues for another year, operational models of the F-111A are in production for delivery to the Tactical Air Command of the United States Air Force beginning in 1967.

We are building these aircraft under a letter contract, which calls for an initial 493 aircraft: 331 F-111A (for the Tactical Air Command), 24 F-111B (for the Navy), 64 FB-111 (for the Strategic Air Command), 24 F-111C (for the Royal Australian Air Force), and 50 F-111K (for the Royal Air Force of Great Britain).

Other highlights of the year included:

Contract awards for four new nuclear submarines, six new large surface ships and two new research submersibles for the United States Navy;

The beginning of delivery in production quantities of Redeye shoulder-fired surface-to-air missiles, and of jeep-mounted single-sideband tactical radio systems;

Twenty-two consecutive launches of Atlas space launch vehicles. The reliability of Atlas over the past two years has earned us a number of incentive awards based on launch and flight performance. Our Centaur liquid-hydrogen-fueled upper stage, in conjunction with Atlas, twice placed Surveyor spacecraft in extraordinarily precise orbits to the moon, and, in another test, proved its ability to reignite its high-energy fuel under the weightless conditions of space.

**PERSONNEL.** While 1966 represented a continued increase in both sales and earnings, we are not yet satisfied with our over-all profitability. Defense contracting must, in the public interest, have reasonably proscribed limits on profit rates. Nevertheless, we have room in which to improve our operations and we intend to do so. The key to profitability, more than in products or programs, lies in how well those products and programs are produced and managed. We are engaged in a major effort to upgrade our management personnel at every supervisory level, to identify and utilize those individuals with the highest potential, and to reward those individuals who make positive contributions.



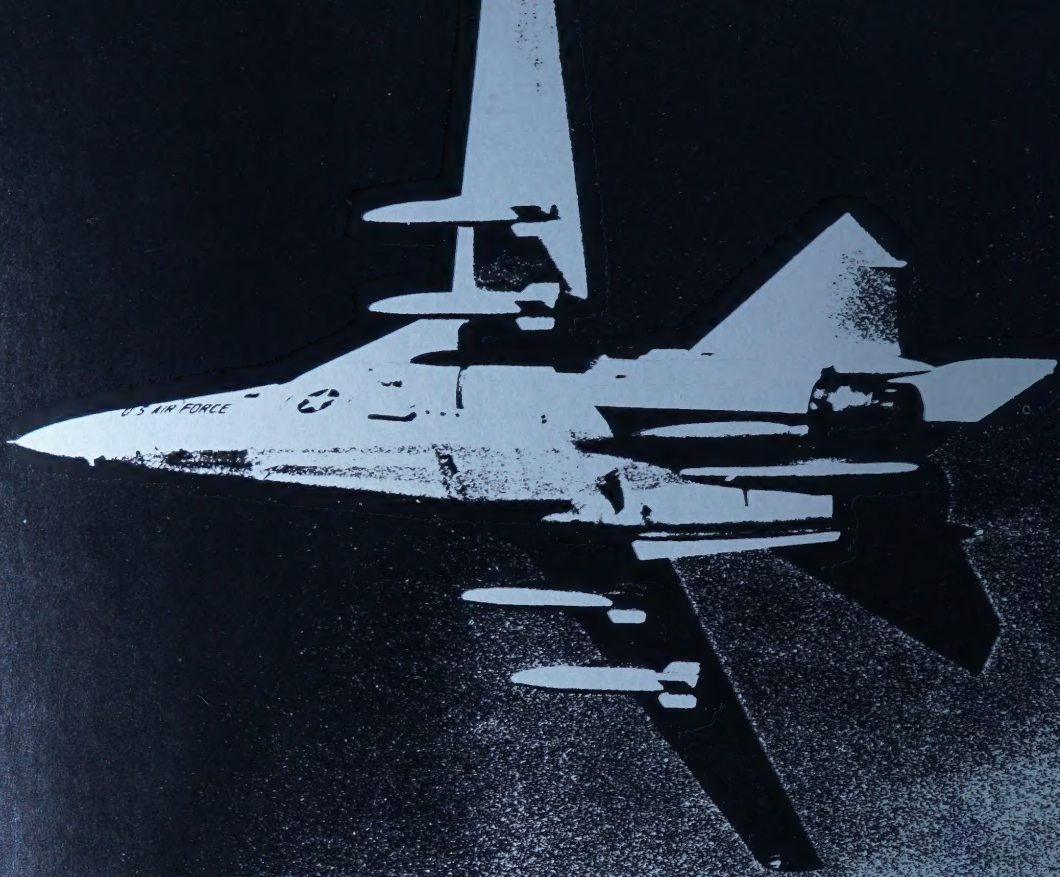
Roger Lewis, President  
January 25, 1967





Atlas-Centaur starts the voyage that soft-landed Surveyor on the moon with extraordinary precision.





An F-111 carries dummy missiles in one of a series of flights to test armament capability.



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### Aircraft

Although the testing program on the RDT&E F-111's continues through mid-1968, production of the prototype aircraft was completed during 1966. Two of the original 23 prototype tactical fighters are being developed into, respectively, a strategic bomber version and a reconnaissance version. The remainder have been placed in flight test.

Test F-111's have already made more than 1,400 flights, accumulated more than 2,300 hours in the air, flown supersonically on almost 500 flights, and above Mach 2 more than 100 times. They have demonstrated sustained supersonic flight "on the deck," and have reached Mach 2.5 at altitude. More than 5,000 wing-sweeps in flight have made this aerodynamic advance as routine as the extension or retraction of wing flaps.

Takeoffs and landings using less than 3,000 feet of runway are common with touch down speeds as low as 105 knots. Many flights over rough mountainous territory have been made using automatic terrain-following radar control.

Although the avionics systems which give the aircraft its military capability are working extremely well, we have begun development of a still more advanced Mark II system.

Production of operational models is well under way. Delivery of the first operational F-111A's to the Tactical Air Command of the United States Air Force is scheduled for 1967. Facilities and tooling for long production runs have been established.

It is only two years since the first F-111 took to the air and demonstrated the practicality of this revolutionary aircraft. The techniques we have proven so far are already recognized as being applicable to commercial as well as military aircraft of the future.

Canadair's CL-84 V/STOL tilt-wing aircraft has progressed rapidly through its test cycle and has met flight targets successfully. This aircraft is now being evaluated by potential users. It has been flown by pilots of the Canadian Defense Force and the United States National Aeronautics and Space Administration. Evaluation flights are scheduled for early 1967 by three of the armed forces of the United States.

Canadair has received orders for 30 of its recently announced CL-215 amphibious utility transport—20 for the Province of Quebec and 10 for the Government of France. These aircraft were initially designed for forest fire control from the air—so-called water bombers. But the basic airplane—the first new amphibian in more than a generation—has application for many uses, particularly for air-sea rescue and as a utility aircraft where land and water basing is required.

Although General Dynamics is essentially a prime contractor for large integrated systems, we also produce complete aircraft under license to other manufacturers, and components under subcontract.

At Canadair, production was started on 115 CF-5 aircraft for the Canadian Government, under license from Northrop Corporation. Our Convair and Canadair operations between them have received almost \$90,000,000 worth of contracts for various components of Lockheed's giant C-5A military cargo aircraft.

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## **Marine**

General Dynamics has been supplying complex marine systems for 68 years; current volume, for both surface vessels and submarines, makes us one of the largest shipbuilders in the United States.

During the year we launched the last of the currently authorized 41 Polaris type submarines; we also received a contract for all four attack submarines in the fiscal 1967 program.

Currently we have under construction or contract 14 new nuclear submarines, one of the Polaris class and 13 attack types. Work was started on the U.S.S. Narwhal, which is designed to be superior in military effectiveness to all previous nuclear attack submarines.

During 1966, we completed the overhaul and conversion of two of the earliest Polaris submarines—the George Washington and the Patrick Henry. Both have now rejoined the fleet equipped with the newest Polaris A-3 missile.

Two other submarines of that class are undergoing parallel conversion and we have contracts for overhaul of a fifth Polaris submarine and the twin reactor U.S.S. Triton. Such overhaul, refueling and conversion work on nuclear submarines should represent a substantial amount of new business over the next few years.

The Poseidon missile, currently being developed by the Navy, will probably require conversion of a number of submarines, and we may logically anticipate a share of such work.

In the surface ship area we won contracts for six large Navy support vessels. Currently we have 11 surface vessels under construction or contract, and are completing the space-electronics work on three Apollo Instrumentation Ships.

During 1966 the U.S. Navy awarded three companies—General Dynamics, Lockheed Aircraft Corporation and Litton Industries—competitive contracts to develop proposals for a Fast Deployment Logistic Ship (FDL) program. Proposals were submitted at the end of January, 1967, and the Navy is scheduled to make its decision during 1967.

In the oceanology area, we launched two new research submersibles, Star II and Star III, received a contract to build two deep-diving





Welders put finishing touches on the hull of a new nuclear submarine at the Electric Boat shipyard.



Vehicle-mounted radio systems enable field troops to keep directly in touch with hundreds of other units.



research submarines for the Navy and started work on construction of NR-1, which will be the Navy's first nuclear-powered oceanographic research submarine.

The ocean data station built for the Office of Naval Research continued to demonstrate structural integrity and information collection capability at sea. The Coast Guard has ordered the basic buoy in a slightly modified form to test as a possible replacement for existing lightships.

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## Space

To cap its long reliability record, Atlas ended 1966 with 22 consecutive successful launches. Among them were the launching of: the Lunar Orbiter spacecraft; the Orbiting Astronomical Observatory, largest United States unmanned spacecraft; an Orbiting Geophysical Observatory; the first of a series of Applications Technology Satellites; and the target and docking vehicles for the Gemini program.

In June Centaur became the first vehicle to reignite high-energy liquid-hydrogen-fueled engines in space. The mission demonstrated that Centaur's high-energy propellant could be properly controlled during extended periods of weightless flight.

The Atlas-Centaur combination in its first operational mission successfully launched the Surveyor I spacecraft that accomplished the first American soft landing on the moon. The Atlas-Centaur lunar trajectory was so accurate that only minor mid-course flight adjustment of the Surveyor payload was required. A second Surveyor spacecraft was placed on an even more precise lunar trajectory in September.

Centaur missions already planned through 1969 include such payloads as Mariner spacecraft to Mars, Applications Technology Satellites, and an Orbiting Astronomical Observatory.

The level of our space sales next year will decline somewhat but should remain relatively stable for several years thereafter. We expect a long use for both Atlas and the high-energy upper stage Centaur; new versions of Atlas are currently being built which will provide for longer burn and greater payload. The demonstrated capability of Atlas and Centaur should make both highly useful in many unmanned space activities, including long planetary probes, over the next decade. Work on satellite vehicles, life sciences, space communication, and new propulsion techniques is continuing. We are prepared to operate at moderate levels in this area while retaining the capacity for fast response when new patterns for both military and civilian space requirements emerge.

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## **Tactical Missiles**

During the year we received a \$34,550,000 contract from the Navy for further production of Terrier and Tartar surface-to-air missiles, which already arm 64 ships of the United States Navy against air attack.

The new Navy Standard Missile continued a series of successful test firings. Standard Missile is being developed in a number of versions: for medium and extended range, and for surface-to-air, surface-to-surface, and air-to-ground uses.

Intensive work has been started on one of these versions, the Standard/ARM (Anti-Radiation Missile). Standard/ARM is being designed to supplement, and ultimately replace, missiles now in use as protection for U.S. aircraft against enemy antiaircraft units. The air-launched missile is designed to home on radiation emitted by ground radar and to destroy the installation with a conventional explosive warhead.

Production of the Redeye man-carried shoulder-fired missile, for use by ground troops against low flying aircraft, was stepped up after successful trials under both Arctic and tropic conditions. Both the Army and the Marine Corps began intensive troop training with the missile for future operational use. Redeye is already being improved for its current ground-to-air and other future missions.

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## **Nuclear**

The prototype high temperature gas-cooled reactor (HTGR), a 40,000 kilowatt unit at Peach Bottom, Pennsylvania, began generating electricity in January, 1967. The plant was built for the Philadelphia Electric Company and 52 other utilities.

The past year and a half has seen a sharp upsurge of interest in commercial nuclear power with over 20,000,000 kilowatts of new nuclear generating capacity ordered by the nation's electric utility companies. Included is the first commercial-sized HTGR power station—to be built for the Public Service Company of Colorado as part of the AEC's power reactor demonstration program. The 330,000 kilowatt Colorado HTGR plant, known as the Fort St. Vrain Nuclear Generating Station, is designed to have a net operating efficiency of about 40%.

Work on HTGR power plants has now advanced to the stage where their economic advantage seems clear. We believe that full scale HTGR power plants, i.e., in the 1,000,000 kilowatt size range, will offer to operating utilities power production at costs appreciably below those of any other current nuclear system.

We are working on a fast breeder reactor power system (designed to produce more fuel than it consumes) which also utilizes gas cooling. Development work is being carried on for the AEC, and a design





An engineer makes final adjustments to control-drive rods of the prototype high temperature gas-cooled reactor.



The V/STOL CL-84 lifts like a helicopter before its wing tilts forward for high-speed flight.



study for a 1,000,000 kilowatt gas-cooled fast breeder reactor is going on as a joint effort of our General Atomic division and the 14 utilities of the East Central Nuclear Group.

Two experimental prototypes of a zinc-air battery system (to power electric vehicles) were operated successfully as part of the joint development program of General Atomic and the Edison Electric Institute.

Electric vehicles for road driving have not been practical because conventional lead-acid batteries are relatively heavy. Vehicles so powered have very short range. The zinc-air system weighs only one-fifth to one-seventh that of equivalent conventional batteries. The range between recharges can be 100 miles or more. While the zinc-air battery development is still in an early stage, its potential for ultimate commercial application has moved significantly closer.

Development and improvement of our reverse osmosis system for treating brackish, saline and contaminated water continued for the United States Office of Saline Water, and a portable 10,000 gallon per day unit was supplied to the Italian Government for test.

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## **Electronics and Telephony**

Quantity deliveries are being made on a variety of tactical radios, including a jeep-mounted communication central used by forward air controllers to direct aircraft strikes in combat areas. We started work on a new series of communication shelters for the transmission of both voice and teletypewriter data. Substantial progress was made in development and production of avionic test equipment, of miniaturized TACAN equipment and of sonobuoy receivers.

The line of data equipment has been expanded and improved so that the recording, storage and retrieval of computer-processed information has been made economic and practical for businesses of any size. Response has been excellent and backlog for data equipment at year end was more than double that at the end of the prior year. To service customers more completely, we have undertaken a distribution agreement on the Kalvar line of dry-process microfilm and microfiche materials and equipment.

The changing characteristics of the independent telephone industry have presented challenges that have required new approaches to both product and marketing.

1966 sales of Stromberg-Carlson telephone equipment were up substantially and year-end backlog was approximately 50 per cent higher than in the previous year. Switching system controls, by which existing telephone exchanges can be updated on a step-by-step basis to provide numbering flexibility, alternate routing and such new subscriber services as tone dialing have been well received.

Demand for toll ticketing equipment increased and we began marketing T-Carrier equipment and #5 cross bar switching equipment. A new automatic dial telephone system for marine use was introduced. The 100-line exchange of this Dialmaster/Marine system is designed for use aboard either naval or commercial vessels and can also be used for military ground support communications.

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## **Building Materials**

In spite of a slowdown in construction in both private and public sectors during 1966, our volume of building materials increased over the previous year. Production of aggregates (sand, gravel and crushed stone), concrete pipe and pre-stressed and pre-cast concrete products established new highs.

Extensive improvements were completed and others begun at the Material Service division to increase capacity and reduce production costs. A new crusher was constructed in the floor of our Thornton quarry together with a belt conveyor system to move crushed rock to the existing processing plant. Final adjustments were made to a similar installation at the Federal quarry.

At our Ottawa, Illinois plant, a new rotary kiln, crushing and screening facilities and additional loading facilities are being built to increase production of Materialite light-weight concrete aggregate by 40%. Demand for Materialite has continued strong. A new light-weight concrete block plant will reach full production capability in 1967.

At the Darlington Brick plant in Darlington, Pennsylvania, construction has been started on facilities to provide a 40% greater capacity for specialty brick products.

Tight money conditions throughout 1966 have caused a reduction in planned construction. This may, in turn, curtail overall demand for building materials and supplies in 1967. We hope to offset possible lower physical demand by greater production efficiency and reduced operating costs.

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## **Coal and Lime Products**

General Dynamics, through its Marblehead Lime subsidiary, supplies lime products for a wide range of uses from water purification to animal feeds, but its biggest single market by far is the steel industry.

As the steel industry rapidly converts to oxygen furnaces (25 per cent of the steel produced in the United States during 1966 was made by this process), the requirement for high quality calcium limes has grown. These are grades which are also in demand for water purification and other non-metal uses.

During 1966, we began operation at two new lime plants—in Buffington, Indiana, and River Rouge, Michigan—and began to get





Wiring is checked for part of a new telephone central switching system.

the benefit of previous expansion at South Chicago and Marblehead, Illinois. Over the past five years, Marblehead Lime has improved its market position substantially.

The increasing use of oxygen furnaces by the steel industry, however, has been a two-edged sword. As demand for calcium limes has risen, demand for dead-burned dolomite, a lime product used in open-hearth furnace operations, has declined. This drop has been partially offset by increased use of dolomitic limes, in addition to calcium limes, in oxygen furnace production.

The production and sale of coal in 1966 by our Freeman Coal and United Electric subsidiaries improved significantly over the prior year to meet the increased demand, primarily by Midwest utilities, created by a generally strong economy.

The shift of United Electric to a 100 per cent owned subsidiary should facilitate the allocation of a portion of Freeman's extensive underground reserves as a back-up for United Electric's limited strip reserves, which have restricted its ability to compete for long term utility contracts. Construction of a fifth underground mine, located in Jefferson County, Illinois, is being started for Freeman Coal.

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## **Gases**

Sales of compressed gases by our Liquid Carbonic operations continued to grow in both domestic and international markets.

To support the growing demand for almost all compressed gases and cryogenic liquids, we have been expanding our gas production capability. Our largest air separation plant was completed during the year in Calumet City, Illinois to serve the Chicago area with oxygen, nitrogen and argon products.

In Toronto, Ontario, we have been building a complex which includes a similar air separation plant, a new unit for the production of high purity electrolytic hydrogen and a new manufacturing facility for the production of welding electrodes and cored welding wire. A hydrogen producing plant was also completed in Dania, Florida.

Demand for carbon dioxide, now used by more than 60 different industries ranging from soft-drink carbonation to aerosols, also continues to increase. A new plant in Madrid went into operation during the year and is already supplying all parts of Spain with CO<sub>2</sub>. A major expansion in Buenos Aires doubled our carbon dioxide production there for the second time within three years. Within the United States new approaches to procurement and distribution strengthened Liquid Carbonic's position as the leading supplier of CO<sub>2</sub>, in liquid, gaseous or solid (dry ice) forms.



An array of antennae aboard Apollo Instrumentation Ships will track moon-bound astronauts.



## Financial History 1957-1966

|                                      | 1966        |
|--------------------------------------|-------------|
| Net Sales                            | \$1,796,991 |
| Profit (Loss) Before Income Taxes    | 95,607      |
| Income Taxes (Credit) <sup>(1)</sup> | 37,200      |
| Net Income (Loss) <sup>(1)</sup>     | 58,407      |
| Per Common Share <sup>(2)(4)</sup>   | 5.59        |
| Preference Dividends <sup>(2)</sup>  | 661         |
| Common Dividends                     | 10,290      |
| Working Capital                      | \$157,542   |
| Property, Plant and Equipment—Net    | 237,754     |
| Long-Term Debt                       | 131,249     |
| Share Owners' Equity                 | 286,102     |
| Per Common Share <sup>(3)(4)</sup>   | 27.71       |
| Total Payrolls                       | \$763,438   |
| Employees                            | 93,196      |
| Share Owners of Record               | 63,104      |
| Preference Shares Outstanding        | —           |
| Common Shares Outstanding            | 10,324,596  |

### NOTES:

(1) Income taxes and net income are before tax reductions of \$16,917,000 in 1963 and \$23,850,000 in 1962 resulting from 1961 loss carry forward. These tax reductions have been added to the income tax credit and deducted from the net loss for 1961. In addition, the 1961 net loss has been further reduced by the \$33,000,000 special credit recorded in 1963. This special credit resulted from reduction in losses provided in 1961 on the commercial jet transport program by reason of cost reductions and performance achievements subsequently realized.

(2) Dividends on the convertible preference stock issued in 1959 were cumulative from and after January 1, 1964, at the annual rate of \$2.90625 per share. Dividends on convertible preference stock paid in 1965 included \$3,768,858 for 1965 and \$4,833,512 for 1964. Net income per common share is after deducting dividends applicable to preference stock. In April 1966 the Corporation redeemed all shares of convertible preference stock then outstanding.

(3) Share owners' equity per common share has been computed by deducting the liquidating value of outstanding convertible preference stock and accrued unpaid dividends.

(4) Amounts per common share for years prior to 1959 are not shown, as they could not be determined without making arbitrary assumptions with respect to the convertible preference stock issued in connection with the merger with Material Service Corporation.



Dollars in Thousands

| 1965        | 1964        | 1963        | 1962        | 1961        | 1960        | 1959        | 1958        | 1957        |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| \$1,472,785 | \$1,579,862 | \$1,415,074 | \$1,898,482 | \$2,062,378 | \$1,987,749 | \$1,811,871 | \$1,626,015 | \$1,666,652 |
| 85,739      | 77,508      | 64,206      | 58,484      | (135,067)   | (61,771)    | 54,156      | 90,739      | 109,358     |
| 36,470      | 34,897      | 31,416      | 29,475      | (65,630)    | (34,715)    | 23,100      | 42,344      | 53,669      |
| 49,269      | 42,611      | 32,790      | 29,009      | (69,437)    | (27,056)    | 31,056      | 48,395      | 55,689      |
| 4.48        | 3.77        | 3.28        | 2.90        | (6.95)      | (2.71)      | 3.12        | —           | —           |
| 8,602       | —           | —           | —           | —           | —           | —           | —           | —           |
| 10,077      | —           | —           | —           | 2,494       | 14,919      | 19,881      | 19,966      | 19,091      |
| \$ 183,613  | \$ 205,672  | \$ 188,451  | \$ 128,145  | \$ 49,722   | \$ 221,971  | \$ 265,129  | \$ 222,238  | \$ 146,760  |
| 210,160     | 192,886     | 190,103     | 170,789     | 192,823     | 191,460     | 182,913     | 171,870     | 156,547     |
| 110,034     | 92,835      | 125,716     | 148,525     | 149,889     | 147,567     | 155,102     | 90,499      | 44,149      |
| 282,827     | 299,630     | 256,594     | 170,539     | 117,671     | 289,235     | 329,739     | 317,392     | 288,587     |
| 23.35       | 19.78       | 15.99       | 7.38        | 2.09        | 16.95       | 21.09       | —           | —           |
| \$ 697,037  | \$ 729,143  | \$ 664,246  | \$ 704,392  | \$ 760,946  | \$ 684,419  | \$ 670,830  | \$ 602,404  | \$ 575,281  |
| 84,600      | 84,200      | 85,900      | 84,500      | 106,000     | 105,700     | 103,600     | 97,500      | 96,100      |
| 66,813      | 73,216      | 79,848      | 85,028      | 86,815      | 87,750      | 81,844      | 70,153      | 61,584      |
| 787,268     | 1,663,384   | 1,663,634   | 1,664,302   | 1,664,516   | 2,064,516   | 2,064,516   | —           | —           |
| 10,152,968  | 10,015,259  | 9,997,992   | 9,997,290   | 9,997,064   | 9,982,079   | 9,944,488   | 9,909,822   | 9,224,419   |

**Consolidated Balance Sheet** December 31, 1966 and 1965

| Assets                                                                                                               | 1966                 | 1965                 |
|----------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| <b>Current Assets:</b>                                                                                               |                      |                      |
| Cash                                                                                                                 | \$ 16,280,552        | \$ 14,553,533        |
| Marketable securities, at cost                                                                                       | 2,307,155            | 8,415,627            |
| Accounts receivable—United States and Canadian Governments                                                           | 38,326,999           | 22,562,514           |
| Other trade receivables, less reserves                                                                               | 76,751,642           | 85,770,215           |
| Unreimbursed expenditures and estimated profits on cost reimbursement<br>and long-term contracts in process (Note 1) | 181,192,092          | 136,700,014          |
| Inventories, at the lower of cost or market, less advance and progress payments                                      | 137,565,138          | 155,460,411          |
| Prepaid expenses                                                                                                     | 5,879,986            | 5,920,741            |
| Total current assets                                                                                                 | <u>\$458,303,564</u> | <u>\$429,383,055</u> |
| <b>Other Assets:</b>                                                                                                 |                      |                      |
| Equity in net assets of unconsolidated subsidiaries (Note 5)                                                         | \$ 13,018,123        | \$ 12,371,487        |
| Receivables not currently due and other assets                                                                       | 24,459,928           | 18,511,400           |
|                                                                                                                      | <u>\$ 37,478,051</u> | <u>\$ 30,882,887</u> |
| <b>Property, Plant and Equipment (Note 6):</b>                                                                       |                      |                      |
| Land and buildings, at cost                                                                                          | \$167,616,215        | \$155,960,368        |
| Machinery and equipment, at cost                                                                                     | 429,898,744          | 386,159,006          |
|                                                                                                                      | <u>\$597,514,959</u> | <u>\$542,119,374</u> |
| Less—Reserves for depreciation, etc.                                                                                 | 359,760,529          | 331,959,343          |
|                                                                                                                      | <u>\$237,754,430</u> | <u>\$210,160,031</u> |
|                                                                                                                      | <u>\$733,536,045</u> | <u>\$670,425,973</u> |

The accompanying notes are an integral part of the above statement.



| Liabilities and Share Owners' Equity                              | 1966                 | 1965                 |
|-------------------------------------------------------------------|----------------------|----------------------|
| <b>Current Liabilities:</b>                                       |                      |                      |
| Notes payable to banks .....                                      | \$ 35,491,500        | \$ —                 |
| Current installments on long-term debt (Note 2) .....             | 6,846,404            | 6,208,952            |
| Accounts payable and accrued expenses .....                       | 185,211,018          | 180,354,747          |
| Accrued salaries and wages .....                                  | 37,667,272           | 34,680,757           |
| United States and Canadian income taxes .....                     | 29,844,077           | 18,889,842           |
| Customers' deposits and advances in excess of costs .....         | 5,701,393            | 5,636,097            |
| Total current liabilities .....                                   | <u>\$300,761,664</u> | <u>\$245,770,395</u> |
| Long-Term Debt (Note 2) .....                                     | <u>\$131,249,495</u> | <u>\$110,033,638</u> |
| Deferred Income Taxes (Note 7) .....                              | <u>\$ 13,967,343</u> | <u>\$ 14,822,622</u> |
| Minority Interests in Subsidiary Companies .....                  | <u>\$ 1,455,831</u>  | <u>\$ 16,971,935</u> |
| <b>Share Owners' Equity:</b>                                      |                      |                      |
| Convertible preference stock, at liquidating value (Note 3) ..... | \$ —                 | \$ 45,759,953        |
| Common stock, par value \$1 per share (Note 4) —                  |                      |                      |
| Authorized—30,000,000 shares                                      |                      |                      |
| Outstanding—10,324,596 shares at end of 1966, after deducting     |                      |                      |
| 35,000 shares in Treasury .....                                   | 10,324,596           | 10,152,968           |
| Capital Surplus .....                                             | 45,925,338           | 41,142,972           |
| Earned Surplus (Notes 2 and 3) .....                              | <u>229,851,778</u>   | <u>185,771,490</u>   |
|                                                                   | <u>\$286,101,712</u> | <u>\$282,827,383</u> |
|                                                                   | <u>\$733,536,045</u> | <u>\$670,425,973</u> |

The accompanying notes are an integral part of the above statement.

**Statement of Consolidated Income** For the Years Ended December 31, 1966 and 1965

|                                                   | 1966                 | 1965                 |
|---------------------------------------------------|----------------------|----------------------|
| Net Sales .....                                   | \$1,796,990,612      | \$1,472,785,201      |
| Cost of Sales .....                               | <u>1,704,681,076</u> | <u>1,387,136,051</u> |
| Profit from operations .....                      | <u>\$ 92,309,536</u> | <u>\$ 85,649,150</u> |
| Other Income (Expense):                           |                      |                      |
| Gain on disposition of securities .....           | \$ 5,936,147         | \$ —                 |
| Interest—net .....                                | (5,018,541)          | (1,856,610)          |
| Miscellaneous—net .....                           | <u>2,379,431</u>     | <u>1,946,389</u>     |
|                                                   | <u>\$ 3,297,037</u>  | <u>\$ 89,779</u>     |
| Profit before Income Taxes .....                  | \$ 95,606,573        | \$ 85,738,929        |
| Provision for Income Taxes .....                  | <u>37,200,000</u>    | <u>36,470,000</u>    |
| Net Income .....                                  | \$ 58,406,573        | \$ 49,268,929        |
| Less—Dividends on Preference Stock (Note 3) ..... | <u>661,100</u>       | <u>3,768,858</u>     |
| Available for Common Share Owners .....           | <u>\$ 57,745,473</u> | <u>\$ 45,500,071</u> |

**Statement of Consolidated Earned Surplus** For the Year Ended December 31, 1966

|                                                                                                                                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Earned Surplus at beginning of year .....                                                                                                         | \$185,771,490        |
| Net Income .....                                                                                                                                  | <u>58,406,573</u>    |
|                                                                                                                                                   | \$244,178,063        |
| Deduct:                                                                                                                                           |                      |
| Excess of redemption price over liquidating value of 781,442 shares<br>of convertible preference stock (Note 3) .....                             | \$ 2,952,377         |
| Excess of cost of marketable securities over par value of 35,000 shares<br>of common stock of the Corporation received in exchange therefor ..... | 423,089              |
| Dividends—Common stock (\$1 per share) .....                                                                                                      | 10,289,719           |
| —Convertible preference stock (Note 3) .....                                                                                                      | <u>661,100</u>       |
|                                                                                                                                                   | 14,326,285           |
| Earned Surplus at end of year .....                                                                                                               | <u>\$229,851,778</u> |

The accompanying notes are an integral part of the above statements.



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**Statement of Consolidated Source and Use of Working Funds** For the Year Ended December 31, 1966

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**Source of Working Funds:**

|                                                               |                      |
|---------------------------------------------------------------|----------------------|
| Net Income .....                                              | \$ 58,406,573        |
| Provisions for depreciation, amortization and depletion ..... | 32,661,725           |
| Long-term debt .....                                          | 21,215,857           |
| Other—net .....                                               | 3,245,569            |
|                                                               | <u>\$115,529,724</u> |

**Use of Working Funds:**

|                                                          |                      |
|----------------------------------------------------------|----------------------|
| Expenditures for property, plant and equipment .....     | \$ 62,099,650        |
| Redemption of convertible preference stock .....         | 48,373,694           |
| Additional investment in consolidated subsidiaries ..... | 20,176,321           |
| Payment of dividends .....                               | 10,950,819           |
|                                                          | <u>\$141,600,484</u> |

|                                 |                      |
|---------------------------------|----------------------|
| Decrease in Working Funds ..... | <u>\$ 26,070,760</u> |
|---------------------------------|----------------------|

The decrease in working funds consists of the following:

|                                                 |                     |
|-------------------------------------------------|---------------------|
| Current assets—decrease (increase)              |                     |
| Cash and marketable securities .....            | \$ 4,381,453        |
| Receivables and unreimbursed expenditures ..... | (51,237,990)        |
| Inventories .....                               | 17,895,273          |
| Current liabilities—increase (decrease)         |                     |
| Notes payable to banks .....                    | 35,491,500          |
| Accounts payable and accrued expenses .....     | 4,856,271           |
| United States and Canadian income taxes .....   | 10,954,235          |
| Other—net .....                                 | 3,730,018           |
|                                                 | <u>\$26,070,760</u> |

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**Statement of Consolidated Capital Surplus** For the Year Ended December 31, 1966

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|                                                                                                                                                                   |                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Capital Surplus at beginning of year .....                                                                                                                        | \$ 41,142,972        |
| Excess of proceeds over par value of common stock sold to employees under stock options .....                                                                     | 3,622,680            |
| Excess of paid-in capital of Dynatronics, Inc. acquired in a pooling of interests over par value of 91,607 shares of common stock issued by the Corporation ..... | 827,242              |
| Excess of liquidating value of convertible preference stock over par value of common stock issued therefor .....                                                  | 332,444              |
| Capital Surplus at end of year .....                                                                                                                              | <u>\$ 45,925,338</u> |

The accompanying notes are an integral part of the above statements.

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**1. Method of Profit Accrual:**

Profits are recorded on all cost reimbursement type contracts and certain long-term contracts prior to completion thereof where, in the opinion of management, such profits can be reasonably estimated after taking into consideration the stage of completion and the estimated final costs and prices.

**2. Long-Term Debt:**

Long-term debt includes notes of \$128,000,000 payable to an insurance company with interest from 5% to 5½%. The terms of the agreements relating to such notes provide, among other things, for (a) payments of \$4,000,000 in 1967, which amount is included in current installments on long-term debt as of December 31, 1966, \$8,000,000 annually in 1968 through 1977, \$25,500,000 in 1978, \$16,500,000 in 1979 and the balance of \$2,000,000 in 1980; (b) consolidated working capital, as defined in the agreements, of not less than \$150,000,000; and (c) restrictions on the amount available for cash dividends on the common stock of the Corporation to 70% of consolidated net income as defined in the agreements subsequent to December 31, 1963, less the sum of cash dividends paid or declared subsequent to that date. As of December 31, 1966, consolidated working capital totaled \$157,541,900 and earned surplus restricted under (c) aggregated \$155,859,656.

There are other long-term notes and mortgages aggregating \$7,249,495 after deducting current installments, due in varying amounts to 1973 with interest from 3% to 6½%.

**3. Convertible Preference Stock:**

On April 15, 1966, the Corporation redeemed the then outstanding 781,442 shares of convertible preference stock at \$62.7491 per share including accrued dividends, or an aggregate of \$49,034,794. The excess of the redemption price over the liquidating value has been charged to earned surplus.

**4. Common Stock:**

The Qualified Stock Option Plan, approved by the share owners in 1964, authorizes the issuance of an aggregate of 475,000 shares of common stock upon exercise of options to be granted under the Plan. The purchase price of shares under option shall not be less than 100% of the fair market value of the common stock at the date the option is granted, and the options may not have a term of more than five years from date of grant. Options become exercisable on such terms and conditions as the Stock Option Committee, appointed by the Board of Directors, shall, in its discretion, prescribe. Options granted become exercisable in cumulative installments of 25% on each of the first four anniversaries of the date of grant.

Under the Corporation's Restricted Stock Option Plan, approved by the share owners in 1951, the price to be paid for the shares covered by each option is 95% of the fair market value thereof on

the date the option was granted. Options under this Plan were granted for a seven-year period and are exercisable in installments from two to five years from date of grant. No additional options may be granted under this Plan, and the final option expires in December, 1970.

Information with respect to options for the year 1966 under each of the Plans is summarized below:

|                                                | Qualified<br>Plan   | Restricted<br>Plan |
|------------------------------------------------|---------------------|--------------------|
| Number of shares under stock options:          |                     |                    |
| Outstanding January 1, 1966                    | 232,895             | 236,953            |
| Add (deduct):                                  |                     |                    |
| Granted                                        | 100,400             | —                  |
| Exercised                                      | (15,545)            | (93,323)           |
| Cancelled                                      | (12,300)            | (32,140)           |
| Outstanding December 31, 1966                  | <u>305,450</u>      | <u>111,490</u>     |
| Aggregate price of shares under stock options: |                     |                    |
| Granted during 1966                            | <u>\$ 5,808,982</u> | <u>\$ —</u>        |
| Outstanding December 31, 1966                  | <u>\$13,266,895</u> | <u>\$2,829,134</u> |

Of the common stock authorized but unissued, 567,715 shares are reserved for options outstanding or issuable under the Corporation's stock option plans at December 31, 1966.

**5. Unconsolidated Finance Subsidiary:**

Stromberg-Carlson Credit Corp., an unconsolidated subsidiary, purchases from the Corporation or a consolidated subsidiary (a) notes issued by independent telephone companies in connection with the sale of telephone equipment, and (b) notes and other receivables resulting from aircraft sales and equipment leases. Following is a summary of the balance sheet of the Credit Corp. as of December 31, 1966:

|                                                              |                     |
|--------------------------------------------------------------|---------------------|
| Notes receivable from independent telephone companies        | \$56,189,069        |
| Notes and receivables on aircraft sales and equipment leases | 25,888,158          |
| Cash and other assets                                        | 2,131,655           |
|                                                              | <u>\$84,208,882</u> |
| Notes payable                                                | \$43,277,000        |
| Bank loans and other short-term borrowings                   | 35,387,270          |
| Other liabilities                                            | 2,952,334           |
| Share owners' equity                                         | 2,592,278           |
|                                                              | <u>\$84,208,882</u> |

The Corporation or a consolidated subsidiary has guaranteed payment of the notes payable, bank loans, and other short-term borrowings, and in the event of default has agreed to repurchase notes and receivables on aircraft sales and equipment leases.

A consolidated subsidiary has discounted an additional \$25,474,994



of notes of independent telephone companies representing interim financing and has agreed to provide long-term financing of such notes through the Credit Corp. In this connection, the subsidiary has guaranteed payment of the discounted notes, in the event of default, up to 20% of the amount discounted.

#### **6. Properties:**

Property, plant and equipment at December 31, 1966, includes land of \$29,720,986. Provisions for depreciation, amortization and depletion aggregated \$32,661,725 in 1966 and \$30,711,981 in 1965.

The Corporation leases from the United States Government substantial portions of plant facilities used in the operation of certain divisions.

#### **7. Income Taxes:**

Deferred income taxes are applicable primarily to accelerated depreciation deducted for tax purposes but not for financial reporting. Such deferred taxes will offset amounts payable in subsequent years when depreciation provisions included in financial statements exceed those allowable for income tax purposes.

Investment tax credits applicable to property additions are reflected in the Statement of Consolidated Income as a reduction of the provision for income taxes.

United States income tax returns of the Corporation are subject to review by the Internal Revenue Service for all years subsequent to 1956.

#### **8. Employees' Retirement Plans:**

The Corporation and subsidiaries have a number of retirement plans covering substantially all employees. The cost of all plans

for 1966 was \$22,007,540, including \$5,372,456 for amortization of prior service benefits. Accrued retirement costs are paid into trust funds which may be used only for benefits provided by the Plans.

#### **9. Liquid Carbonic:**

Under the judgment of a Federal District Court entered on December 1, 1966, the Corporation must divest itself by July 3, 1969, of the Liquid Carbonic Division, together with its holdings of stocks of foreign companies engaged in the production, distribution and sale of carbon dioxide or other industrial gases.

Net sales of Liquid Carbonic operations for the year 1966 included in consolidated sales of the Corporation amounted to \$66,660,000 or 3.7% after excluding \$2,602,000 of intercompany and inter-division sales. Sales of the unconsolidated subsidiaries not included in consolidated sales were \$14,636,000. Net income of the Corporation and subsidiaries includes earnings of the Liquid Carbonic Division and subsidiaries of approximately \$4,675,000 before allocation of corporate office expense, or 8.0% of consolidated net income.

#### **10. Contingent Liabilities:**

A substantial portion of sales for 1962 through 1966 is subject to review by the United States Renegotiation Board. Management believes that the Corporation will not be required to make refunds under the Renegotiation Act of 1951, and consequently no provision has been made therefor.

In addition, there were other contingent liabilities with respect to guarantees, law suits and other matters arising in the ordinary course of business. In the opinion of management, reasonable reserves have been provided for contingent liabilities.

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### **Auditors' Report**

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To the Share Owners and the Board of Directors of  
General Dynamics Corporation:

We have examined the consolidated balance sheet of General Dynamics Corporation (a Delaware corporation) and subsidiaries as of December 31, 1966, and the related statements of consolidated income, surplus and funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We were unable to obtain confirmation of receivables from the United States and Canadian Governments; however, we have applied other auditing procedures as to such receivables. We have previously examined and reported on the financial statements for the preceding year.

In our opinion, the accompanying consolidated balance sheet and statements of consolidated income, surplus and funds present fairly the financial position of General Dynamics Corporation and subsidiaries as of December 31, 1966, and the results of their operations and the source and disposition of funds for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

New York, N. Y.,  
January 23, 1967.

ARTHUR ANDERSEN & CO.



A Standard Missile hurls itself from a launching stand in a successful development test.



## Officers

## Board of Directors

### President

Roger Lewis

### Vice Presidents

Frank W. Davis

Frederic de Hoffmann

John A. Dundas

John C. Franklin

Max Golden

John J. Graham

Roger I. Harris

Edward H. Heinemann

Algie A. Hendrix

Carl G. Holschuh

Charles E. Horne

Patrick H. Hoy

J. William Jones, Jr.

Edward J. LeFevre

J. T. MacDonald

Frank Nugent

John A. Sargent

Patrick J. Sullivan

### Secretary

John P. Maguire

### Treasurer

Harold K. Pedersen

### Comptroller

William T. Lake

Roger Lewis, *Chairman*

William C. Bolenius

H. S. M. Burns

Sylvan C. Coleman

B. Emmet Finucane

I. M. Laddon

Maurice T. Moore

David Packard

John A. Sargent

Leo D. Welch

## **General Dynamics Corporation**

One Rockefeller Plaza, New York, New York 10020

### **PRINCIPAL OPERATING UNITS**

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#### **Divisions**

CONVAIR DIVISION · San Diego, California  
ELECTRIC BOAT DIVISION · Groton, Connecticut  
ELECTRO DYNAMIC DIVISION · Avenel, New Jersey  
ELECTRONICS DIVISION · Rochester, New York  
FORT WORTH DIVISION · Fort Worth, Texas  
GENERAL ATOMIC DIVISION · San Diego, California  
MATERIAL SERVICE DIVISION · Chicago, Illinois  
POMONA DIVISION · Pomona, California  
QUINCY DIVISION · Quincy, Massachusetts

#### **Subsidiaries**

CANADAIR LIMITED · Montreal, Quebec, Canada  
FREEMAN COAL MINING CORPORATION · Chicago, Illinois  
LIQUID CARBONIC CORPORATION · Chicago, Illinois  
MARBLEHEAD LIME COMPANY · Chicago, Illinois  
STROMBERG-CARLSON CORPORATION · Rochester, New York  
THE UNITED ELECTRIC COAL COMPANIES · Chicago, Illinois

### **TRANSFER AGENTS**

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Bankers Trust Company · New York, New York  
Bank of America National Trust and Savings Association ·  
San Francisco, California  
The First National Bank of Jersey City · Jersey City, New Jersey  
The First National Bank of Chicago · Chicago, Illinois  
Montreal Trust Company · Montreal, Quebec,  
and Toronto, Ontario, Canada

### **REGISTRARS**

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The Chase Manhattan Bank · New York, New York  
Wells Fargo Bank · San Francisco, California  
American National Bank and Trust Company of Chicago ·  
Chicago, Illinois  
The Royal Trust Company · Montreal, Quebec,  
and Toronto, Ontario, Canada

### **STOCK EXCHANGE LISTINGS**

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New York Stock Exchange  
Midwest Stock Exchange  
Pacific Coast Stock Exchange  
Montreal Stock Exchange  
Toronto Stock Exchange

### **AUDITORS**

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Arthur Andersen & Co. · New York, New York



**GENERAL DYNAMICS**

